

Land Use, Airport, and Airports



FAA Airport Construction

Southern Region

A Guide For Effective Land Use Planning

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LAND USE COMPATIBILITY AND AIRPORTS

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PREFACE

The development of land uses that are not compatible with airports and aircraft noise is a growing concern across the country. In addition to aircraft noise, there are other issues, such as safety and other environmental impacts to land uses around airports which need to be considered when addressing the overall issue of land use compatibility. Although several federal programs include noise standards or guidelines as part of their funding-eligibility and performance criteria, the primary responsibility for integrating airport considerations into the local land use planning process rests with local governments. The objectives of compatible land use planning are to encourage land uses that are generally considered to be incompatible with airports (such as residential, schools, and churches) to locate away from airports and to encourage land uses that are more compatible (such as industrial and commercial uses) to locate around airports. The FAA has been actively supporting programs to minimize noise impacts. These include phase out of noise aircraft, supporting airport noise compatibility programs, funding of mitigation measures in environmental studies.

Interest has been expressed in having the federal government play a much stronger role in airport-related land use compatibility planning. Although the federal government cannot dictate local land use policies, it can play a role in facilitating the coordination between airports, local, county, and regional planning agencies to ensure that compatible land use planning occurs around our nation's airports.

The Federal Aviation Administration's (FAA) Southern Region Airports Division Office has received requests from airport personnel and local governments to provide guidance on how to establish and maintain compatible land uses around airports. The Southern Region Airports Division Office is responsible for

planning, building, expanding, and improving airports; finding solutions to airport congestion; supporting noise-compatibility and noise-reduction programs; minimizing adverse environmental impacts; and ensuring safety and regulatory compliance in the states of Alabama, Georgia, Mississippi, Kentucky, North Carolina, South Carolina, Tennessee, Florida, the U.S. Virgin Islands, and Puerto Rico.

In response to these requests, the FAA Southern Region, established, in 1998, a ***Compatible Land Use Planning Task Force***. The Task Force was charged with identifying how to better coordinate the airport master planning process (and related environmental plans) with the local comprehensive land use planning process. The Task Force determined that a resource guide to assist local governments and airports in identifying and implementing appropriate compatible land use tools (such as, airport overlay zones and aviation easements) would be the best way to prevent or slow down the proliferation of incompatible land uses around airports.

This guide, developed by the Task Force, is provided as a resource to local planners, governments, and other interested parties and should not be construed as FAA regulations or official agency policy. The case studies contained within this guide are included as examples to illustrate specific techniques and strategies of how and where some of the compatible land use tools across the country have been applied and implemented. Inclusion of these examples does not in any way represent official endorsement by the FAA. In some instances, approved Part 150 Noise Compatibility Program measures and Noise Exposure Maps have been included as examples for discussion purposes only.

The Task Force consists of representatives from airport planning staffs, airport planning consultants, city/county planning departments, state aviation departments, and the FAA Regional Environmental Program Manager.

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EXECUTIVE SUMMARY

The objective of aviation-related land use planning is to guide incompatible land uses away from the airport environs and to encourage compatible land uses to locate around airport facilities.

This compatible land use guide has been prepared for airport managers, local land use planners, developers, and elected or appointed public officials. Its purpose is to provide information on FAA programs and sources of support and to promote an understanding of land use compatibility planning issues around airports that could result in improved compatibility in the airport environs.

While not the only compatibility issue, aircraft noise has been the primary driver of airport land use compatibility conflicts. Since the introduction of turbo jet aircraft in the late 1950s, there has been a constant technical effort to reduce aircraft noise emissions. Although there has been significant reduction in aircraft engine noise, little more can be expected in the field of noise-reduction technology. Consequently the focus must now be on airport-specific noise and land use compatibility planning.

This guide identifies a wide variety of possible land use control methods as they relate to compatible land use planning efforts. This guide also recognizes that state and local governments are responsible for land use planning, zoning and regulation, and presents options or tools that can assist in establishing and maintaining compatible land uses around airports. To assist in those efforts, the Federal Aviation Administration (FAA), local airport sponsors, and state aviation agencies have expended significant funds related to airport planning and land use compatibility planning in the United States. These efforts have taken the form of Airport Master Plans, Noise Compatibility Studies, and land acquisition and

sound insulation programs. There are also other land use issues that are of concern at general aviation facilities. These are also reviewed and discussed in this guide.

Roles and Responsibilities

There are many entities involved in implementing or supporting actions directed toward improved land use compatibility around airports. These entities include the FAA, airlines, cargo carriers, commercial and general aviation airports, state and local governments, system users, and the community at-large. Knowing the interwoven roles and responsibilities for land use compatibility planning and implementation is important to helping understand the responsibilities placed on each entity and individual involved.

Legislation and Regulations Relating to Aircraft Noise and Compatible Land Use Planning

With the advent of jet aircraft and increasing aircraft operations at the nation's airports, it was recognized that aircraft noise could become a major constraint on further development of the commercial aviation network. To address the issues of aircraft noise and land use compatibility, legislation and regulation over the past three decades has focused on:

1. Providing assistance to airport operators to prepare and carry out noise-compatibility programs.
2. Providing funding for noise compatibility planning and projects.
3. Requiring airport operators to ensure that actions are taken to establish and maintain compatible land uses around airports.
4. Establishing a National Noise Policy that phases out noisier (Stage 1 and Stage 2) aircraft while phasing in quieter (Phase 3) aircraft according to a specified time frame.
5. Establishing a commitment by the federal government to fully consider the environmental effects (including noise) of a proposed action such as a new runway or a major runway extension.

6. Establishing mitigation measures, which minimize impacts to water, wetlands, and endangered species and protect the historical and cultural environment.

Funding Sources

There are two primary federal funding sources for compatible land use planning projects: the Airport Improvement Program (AIP) and the Passenger Facility Charge (PFC). Some additional funding sources may also exist at the state and local levels.

Airport and Local Land Use Planning Process

Airport Planning

Airport Planning in the United States is performed at several levels. These planning processes (typically referred to as System Planning) are performed at the national, state, regional, and local levels.

Airport Master Planning

The Airport Master Plan is a document that details the long-term development of an airport. The basic purpose of an Airport Master Plan is to set out a plan for future development designed to meet projected needs given community, environmental, and political considerations. An Airport Master Plan is also a tool to ensure that aviation planning among federal, state, regional and local agencies is coordinated.

Airport Master Planning and Comprehensive Land Use Plans

Aviation is an element of a region's transportation system therefore, the goals of airport development should be established in the framework of an area's comprehensive plan. The Master Plan is a published document, approved through a public hearing process by the governmental agency or authority that owns or operates the airport. The Airport Master Plan should be coordinated with local jurisdictions surrounding the airport to ensure that future airport development plans are taken into consideration in each jurisdiction's local comprehensive land use plan. Local land use planners and airport planners should use it to evaluate new development within an airport's environs.

Aircraft Noise Compatibility Planning

Aircraft noise has been an issue at almost every airport over the last four decades. Technology has improved aircraft performance capabilities and reduced noise emitted by aircraft engines. Continued progress in achieving aircraft noise and land use compatibility is now focused at the airport specific level. One of the best mechanisms available to address aircraft noise compatibility planning is the Federal Aviation Regulation (FAR) Part 150 Noise Compatibility Program.

The FAR Part 150 Program was established under the Aviation Safety and Noise Abatement Act of 1979 and allows airport operators to voluntarily submit noise exposure maps and noise compatibility programs to the FAA for review and approval. A noise compatibility program sets forth the measures that an airport operator "has taken" or "has proposed" for the reduction of existing incompatible land uses and the prevention of additional incompatible land uses within the area covered by noise exposure maps. Typically recommended noise abatement measures fall into three categories:

1. Operational measures such as changes in runway use or changes in flight-track location.
2. Preventive measures such as compatible land use zoning or noise overlay zoning within off-airport noise exposure areas.
3. Remedial measures such as purchase of property or sound insulation of residential property that is exposed to significant aircraft noise.

Local Land Use Planning

Historically land use plans (comprehensive plans) prepared by local governments have only minimally recognized the implications of planning for airports and off-site, airport-related development. Local land use planning, as a method of determining appropriate (and inappropriate) use of properties around airports should be an integral part of the land use policy and regulatory tools used by airports and local land use planners. Very often such land use planning coordination is hampered by the fact that airport facilities can be surrounded by a multitude of individual local governmental jurisdictions, each with their own comprehensive planning process.

Coordination and Implementation of Airport and Local Land Use Planning

Coordination during the early stages of Airport Master Planning and local land use planning is extremely critical for ensuring some level of land use compatibility. This coordination must occur before the creation, adoption, and implementation of both airport and local land use plans. Such coordination requires open dialogue and, at the least, some type of basic understanding of each other's planning processes.

Compatible Land Use Tools and Their Potential Applications

There are many land use planning and regulatory tools available to local governmental organizations. Among them are:

Comprehensive Plans

The preparation and adoption of a comprehensive plan is a critical and effective part of the process of ensuring land use compatibility around airport facilities.

Zoning Regulations

The use of zoning to control development around airport facilities has realized varied degrees of success. If put in place early enough, however, zoning can be an effective tool to help eliminate or reduce land uses that are not compatible with airports.

Subdivision Regulation

Subdivision regulations are usually prepared, adopted and enforced through the actions of a local legislative body and/or a local planning commission.

Subdivision plat review procedures provide an opportunity for jurisdictions to determine how and if a proposed subdivision design could contribute to the incompatibility of noise exposure in the airport environs.

Building Codes

While generally concerned with the functional or structural aspects of buildings or structures, some building codes have special requirements for properties located in high noise exposure areas.

Housing Codes

Housing standards usually relate to the minimum that a home would have to meet in order to be decent, safe, and sanitary. To some extent, and in combination with building codes and performance standards, housing codes may serve as a basis for noise impacts to residential occupants.

Capital Improvement Programming

A capital improvement program is another tool used to assist local governments in realizing the goals, objectives, and recommendations of an adopted comprehensive plan. This programming tool could be used in a cooperative manner to encourage or discourage certain types of land development around airport facilities.

Official Map Regulations

Adoption of map regulations in support of comprehensive plans and capital improvement programs permits these maps to show the location and extent of existing and proposed public facilities and needs. A potential application of such map regulations would be to encourage compatible development in an area designated for a runway in an airport's Master Plan.

Infrastructure Extensions

Provision or extension of basic infrastructure elements such as water, sewer, and roadways can significantly affect the extent and direction of growth and development. Used in conjunction with comprehensive plans and Airport Master Plans can allow for land uses to take place in areas that are compatible with aviation facilities.

Growth Policies

Some communities are developing comprehensive plans using the concept of controlling growth in specific areas. Identification of airports, surrounding affected areas, and Master Plan concepts, as part of growth policies planning is critical for successful growth policies planning.

Transferable Development Rights (TDR) and Purchase of Development Rights (PDR)

Both TDR and PDR involve the relocation of development rights (through transfer or purchase) from one location to another. Either mechanism has the potential to allow airports to either avoid incompatible development or promote compatible development in specific noise-impacted areas.

State Airport Zoning Commission Regulations

State statutes addressing aviation and airports are varied. Planners from all disciplines should be familiar with the laws in their respective states.

Negotiation/Mediation

The negotiation or mediation technique can be an important tool when employed to address land use compatibility conflicts or disputes associated with airport facilities.

Public Education and Awareness Programs

Airports or local planning agencies that expect a reasonable chance of success in their planning efforts must provide for public education and awareness in the planning process.

Information Dissemination

Dissemination of information is a one-way flow of a desired message or philosophy. The type of audience may range from a very narrow one to the community at-large. Among the information dissemination opportunities are brochures, newsletters, paid advertising, newspaper inserts, and Internet Web pages.

Information Exchange

Information exchange is a two-way flow of information. Once the information is disseminated, a dialogue occurs that may be used to enhance the education process and ultimately improve land use compatibility planning and to determine the public's attitude toward or acceptance of the disseminated message. Among the information exchange opportunities are public workshops, public advisory committees, radio/T.V. talk shows, and speaking engagements.

Conclusion

Airport and community planning processes are intertwined. To that extent, the material contained in this guidebook are focused on communication and cooperation, and directed toward the establishment of those common goals that are necessary for the development of compatible land use programs.

I. INTRODUCTION

A. Purpose of This Guide

To assist local units of government and land use planners who have an airport within their jurisdiction (or are affected by the impacts of airport/aircraft operations within their jurisdictions), the FAA Southern Region has pooled the resources of FAA environmental planners; airport planning consultants; state, regional, and local planners; and airport owners to prepare this guide for airport land use compatibility planning. This guide should assist airport managers and planners, local land use planners, developers, and elected and appointed public officials in promoting an understanding of land use compatibility planning issues around airports and in implementing the tools presented.

This guide identifies the importance of airport land use compatibility planning, summarizes the issues involved in achieving compatibility, presents a variety of methods which have been used to attain land use compatibility, and describes the responsibilities involved in implementing land use compatibility measures. It is particularly important to provide this guide for the management of smaller airports that do not have planning staffs. It is also important for every airport manager to understand land use compatibility issues and land use regulations. The guide also provides an overview of airport planning and development so that local land use planners and their elected officials can understand the airport planning process.

Finally, the guide not only presents a discussion of land use compatibility issues, but it also identifies opportunities for coordination of both the airport planning and land use planning processes. It is critical that these two planning processes be integrated/coordinated as much as possible.

Four key issues have been identified for evaluating the types of land uses to be considered compatible around airports:

- The impact of aircraft noise and noise compatibility planning;
- The potential for airspace conflicts from tall structures in the vicinity of an airport;
- The possibility of electronic interference with aviation navigation aids; and
- The potential for interaction between aircraft and wildlife attractants.

A more detailed presentation for each of these factors is provided throughout the remainder of this guide.

B. FAA Actions Related to Land Use Planning

While the FAA can provide assistance and funding to encourage compatible land development around airports, it has no regulatory authority for controlling land uses to protect airport capacity. The FAA recognizes that state and local governments are responsible for land use planning, zoning, and regulation including that necessary to provide land use compatibility with airport operations.

However, pursuant to the Federal Airport and Airway Development Act, as a condition precedent to approval of an FAA-funded airport development project, the airport sponsor must provide the FAA with written assurances that “...appropriate action, including the adoption of zoning laws have been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations including landing and takeoff of aircraft....”

FAA has required the phasing out of noisy Stage 1 and Stage 2 aircraft consequently, the aviation industry has spent substantial monies to meet this requirement. To assist in the compatible land use efforts, the FAA, local airport sponsors, and state aviation agencies have expended significant funds related to airport planning and off-airport noise and land use compatibility planning throughout the United States. Airport master plans have been prepared to identify